

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/5/2009 has been entered.

### ***Claim Objections***

2. Claim 5 is objected to because of the following informalities: in claim 5, the recitation of "formed as" is unclear whether it is inclusive or exclusive and the claim limitation appears to be directed to a method of manufacturing. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 and 3-5 rejected under 35 U.S.C. 103(a) as being unpatentable over Crowley (US 5,715,825) in view of Abe (JP 2002078673).

6. Crowley teaches an ultrasonic probe (6), comprising an ultrasonic element (10) for transmitting and receiving ultrasonic waves (col. 14, line 59 -16); and a sound window (24) and (25) enclosing the ultrasonic element; and a sound propagation liquid (col. 11, lines 39-41 ) charged in the sound window, wherein a barrier layer (12) capable of inhibiting the permeation of liquids and gases (Abstract, lines 1-2) is provided on a wall surface of the sound window (col. 10, lines 41-42). See figures 1-5. Crowley teaches an elastic reserve tank (interior chamber of 12; col. 11, lines 39-41; figure 4).

7. Crowley does not explicitly teach the barrier layer comprising at least one selected from a polyparaxylylene layer and a metal layer, wherein the thickness of the polyparaxylylene layer is in the range from 0.1  $\mu\text{m}$  to 500  $\mu\text{m}$  and the polyparaxylylene layer is formed by vapor deposition of diparaxylylene or the derivative thereof.

8. Abe teaches a barrier located on an internal wall surface of a sound window (see abstract) wherein the barrier layer comprises a polyparaxylylene layer having a thickness in the range of 0.1  $\mu\text{m}$  – 75  $\mu\text{m}$  (Abstract) and being formed by vapor deposition of diparaxylylene or the derivative thereof ([0087], lines 1-2).

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9. It would have been obvious to one having ordinary skill in the art at the time of the invention to form the barrier layer of polyparaxylylene in the Crowley invention, in light of the teaching of Abe in order to enhance the durability of the probe and increase impermeability characteristics of the barrier layer ([0081]). The range as taught by Abe is within the range disclosed by the applicant and therefore, teaches the range disclosed by the applicant.

10. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crowley (US 5,715,825) in view of Abe (JP 2002078673) and further in view of Law et al. (US 5,469,853).

11. Crowley does not teach the barrier layer comprising a metal layer and the metal layer comprising at least one selected from the group consisting of aluminum, gold, nickel and platinum, wherein the thickness of the layer in the range from 0.1 $\mu$ m – 30  $\mu$ m.

12. Law et al. teach the barrier layer, for example, a sheath, comprising a metal layer and the metal layer comprising at least one selected from the group consisting of aluminum, gold, nickel and platinum (col. 18, lines 52-53 and col. 35, lines 20-24), wherein the thickness of the layer is no greater than 0.4 mm (col. 18, lines 35-36).

13. It would have been obvious to one having ordinary skill in the art at the time of the invention to include a metal barrier layer, wherein the metal layer comprises at least one selected from the group consisting of aluminum, gold, nickel and platinum in the invention of Crowley in view of Abe, in light of the teachings of Law et al. in order to enhance the durability of the probe. The thickness of the barrier layer taught by Law et

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al. may be any value less than 0.4mm, which includes the values of the range claimed by the applicant. It would have been obvious to one having ordinary skill in the art at the time of the invention to select values within the range of 0.1  $\mu\text{m}$  - 30  $\mu\text{m}$  in order to have the most optimal barrier layer thickness required to effectively perform the procedure.

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crowley (US 5,715,825) in view of Abe (JP 2002078673) and further in view of Verdonk (US 5,640,961).

15. Crowley discloses the subject matter substantially as claimed except for the barrier layer comprising a plurality of layers. Verdonk teaches the barrier layer comprising a plurality of layers (col. 8, lines 9- 10 and lines 13-16).

16. It would have been obvious to one having ordinary skill in the art at the time of the invention to include a barrier layer comprising a plurality of layers in the Crowley in view of Abe apparatus, in light of the teaching of Verdonk in order to improve focusing of the ultrasonic beam (col. 8, lines 13-18).

### ***Response to Arguments***

Applicant's arguments filed 7/15/2009 have been fully considered but they are not persuasive.

Applicant argues that Crowley does not teach a grip portion because it is a catheter. However, the Examiner respectfully disagrees with the applicant. The Examiner notes that Crowley inherently has a grip portion in order for the catheter to be handled. Especially in the case in which the catheter is to be inserted into a subject, as the physician or operator must inherently grip the catheter in order to insert it into the

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subject. The Examiner further notes that applicant has failed to provide a special definition or meaning to the term "grip portion", therefore, the Examiner can broadly interpret the grip portion to be any portion in which is capable of being held.

In response to applicant's argument that Crowley fails to disclose the elastic tank absorbs changes of pressure of the sound propagation fluid, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The Examiner notes that applicant has failed to disclose structural differences between the prior art of reference and the instant invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Luong whose telephone number is (571)270-1609. The examiner can normally be reached on Monday - Friday, 9:30 a.m. - 6:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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